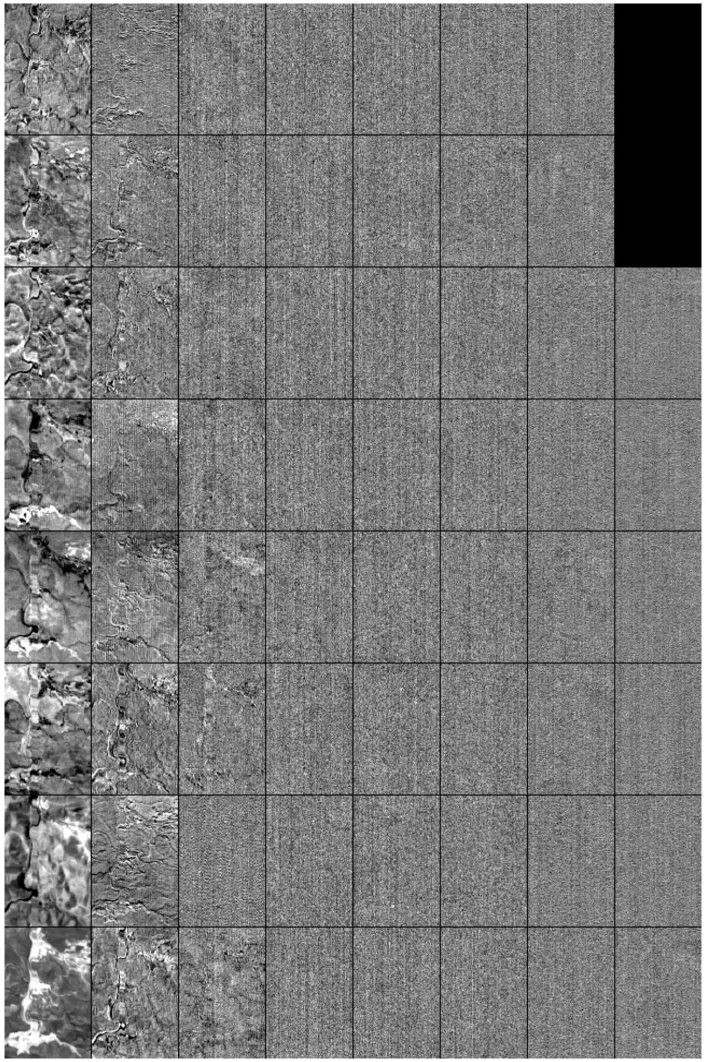

Figure 2.2: Minimum/maximum autocorrelation factors of 62 GERIS bands

In order to show the ability of the MNF transformation to concentrate the discriminatory power of the GERIS data in a few components we show in Figure 2.6 an RGB (red-green-blue) and an IHS (intensity-hue-saturation) combination of the restored MNFs 1, 2 and 3 respectively. As the first of the MNFs often contains most of the topographic features the IHS representation is often a good way of visualizing the MNF space. The intensity channel is stretched to match a beta distribution with parameters $\alpha = 4.0$ and $\beta = 4.0$, similar to a Gaussian. The hue channel is stretched to match a beta distribution with parameters $\alpha = 1.0$ and $\beta = 1.0$, this is histogram equalization. The saturation channel is stretched to match a beta distribution with parameters $\alpha = 2.0$ and $\beta = 1.0$, which is a linearly growing distribution.

This case is given in GAF, MAYASA, IMSOR, & DLR (1993), Nielsen & Larsen (1994) also. Similar noise reduction schemes are used in Conradsen, Nielsen, & Nielsen (1991a), Berman (1994). An artificial neural network approach to MNF noise filtering in a multichannel airborne magnetic survey is given in Pendock & Nielsen (1993).

2.5.2 MAFs and Irregular Sampling

This section deals with MAF/MNFs of irregularly spaced image data and MAF kriging. The data used are the 2,097 samples of 41 elements from South Greenland and the 2,625 samples of 16 elements from southern Spain used in the case studies of Chapter 1 also. Both are stream sediments geochemistry data. These cases are shown in GAF, MAYASA, IMSOR, & DLR (1993) also.

Figure 2.7 shows a geologic map of South Greenland (from Olesen (1984) who worked on geochemical data from South Greenland also). Figure 2.8 shows the sampling pattern in South Greenland with varimax rotated principal factors 1, 2 and 3 as red, green and blue. All images here are shown in landscape mode. Figure 2.9 shows MNFs 1, 2 and 3 as red, green and blue. Figure 2.10 shows the result of the MAF kriging procedure. MAFs 1, 2 and 3 are shown as red, green and blue respectively. A comparison of the results in the words of Senior Geologist Agnete Steenfelt (Geological Survey of Greenland, GGU):